



**CITY OF HOUSTON  
FIRE PREVENTION BUREAU  
HOUSTON FIRE DEPARTMENT**



**LIFE SAFETY BUREAU (LSB) STANDARD 18  
HIGH-RISE FIRE SAFETY PLAN APPROVAL**

**SUPERCEDES: NEW STANDARD**

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5-23-03

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5-28-03

**LSB STANDARD 18**

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LIFE SAFETY BUREAU (LSB) STANDARDS ARE ESTABLISHED IN ACCORDANCE WITH PROVISIONS OF THE CITY OF HOUSTON FIRE CODE. THEY ARE SUBJECT TO THE ADMINISTRATIVE SECTIONS COVERING - ALTERNATIVE MATERIALS AND METHODS, MODIFICATIONS, AND BOARD OF APPEALS.

# HIGH-RISE FIRE SAFETY PLAN APPROVAL

## CONTENTS

<b>SECTION 1 --- GENERAL</b>	<b>PAGE</b>
1.1 Scope .....	3
1.2 Purpose .....	3
<b>SECTION 2 --- DEFINITIONS</b>	
2.1 Building Emergency Response Personnel (BERP).....	3
2.2 Fire Safety Director.....	3
<b>SECTION 3 --- QUALIFICATIONS TO INSTRUCT</b>	
3.1 Qualifications.....	3
<b>SECTION 4 --- COMPONENTS OF FIRE SAFETY PLAN APPROVAL</b>	
4.1 High-rise Fire Safety Plan Approvals .....	3
<b>SECTION 5 --- PROPERTY MANAGEMENT CONSULTATION</b>	
5.1 Consultations with Management .....	3
<b>SECTION 6 --- FIRE WARDEN CERTIFICATION CLASS</b>	
6. 1 High-rise Certification Class.....	4
6.1.1 Elements of High-rise Fire Warden Certification training.....	5
<b>SECTION 7 --- FIRE DRILL</b>	
7.1 Fire Drill as final step in plan approval.....	6
7.2 Prepare for and conduct the Drill.....	6
7.2.1 Pre-Drill preparations.....	6
7.2.2 Day of Drill preparations.....	6
7.2.3 Conducting the Drill.....	6
7.2.4 Post-Drill.....	6
<b>SECTION 8 --- CERTIFICATES OF APPROVAL</b>	
8.1 Conditions of approval.....	7
<b>SECTION 9 --- FIRE SAFETY PLAN APPROVAL</b>	
9.1 Fire Marshal Approval letters.....	7
9.2 Certificates of Completion of Fire Warden Training.....	7
9.3 Maintaining an approved Fire Safety Plan.....	7
<b>REFERENCES .....</b>	<b>8</b>

## ATTACHMENTS:

- I. ***“BURNING ISSUES”***, E. A. Corral, Fire Marshal, Houston Fire Department
- II. ***“Fire Alarm System Maintenance During Construction In High-rise Buildings”***, E. A. Corral, Fire Marshal, Houston Fire Department.

## LSB STANDARD 18

### HIGH-RISE FIRE SAFETY PLAN APPROVAL

#### SECTION 1 ---- GENERAL

##### 1.1 Scope.

This standard shall apply to all persons seeking to provide high-rise fire safety training and high-rise fire safety plan approvals within the City of Houston in accordance with the *Fire Code*.

##### 1.2 Purpose.

This standard shall provide minimum guidelines for high-rise training as permitted by LSB Standard 07, "High-Rise Fire Safety Plans" toward a fire-safety plan approval by the Fire Marshal.

#### SECTION 2 --- DEFINITIONS

**2.1 Building Emergency Response Personnel (BERP).** Representatives of the building owner or management who are trained to investigate the cause of a fire alarm. In event of a fire or other emergency, BERP are available to assist in evacuation of occupants and assist the Fire Safety Director with building fire safety systems and equipment, in accordance with the building's fire plan.

**2.2 Fire Safety Director.** Representative of the owner of a high-rise building and who is mandated by the Fire Marshal, to implement the Fire Safety Plan by providing information and properly training building staff, tenants, residents and guest, as defined herein. The Fire Safety Director is responsible for directing the Fire Safety Plan during and after a fire emergency.

**2.3 Fire Safety Team.** Building personnel selected and trained to utilize the emergency plans and procedures in promoting general fire and life-safety in high-rise buildings. A Fire Safety team shall include the Fire Safety Director, Assistant Directors, the Building Emergency Response Personnel (BERP), Fire Wardens and such other persons specified in the approved safety plan. The members of the Fire Safety Team shall possess a certificate signed by the Fire Marshal.

**2.4 High-rise Certification Classes.** Training provided to tenant designated Fire Wardens and all property management employees, staff and/or contract personnel by an instructor approved by the Fire Marshal to certify that they have been trained in accordance with the requirements of the City of Houston *Fire Code* and this standard.

**2.5 Supervised Fire Drill.** A planned fire drill performed under supervision of an approved training instructor.

**2.6 Approved Training Instructor.** A qualified individual approved in accordance with Section 3.1 to instruct high-rise safety for fire safety plan approval by the Fire Marshal.

## **SECTION 3 --- QUALIFICATIONS TO INSTRUCT**

### **3.1 Qualifications.**

Qualifications of individuals to instruct high-rise fire safety in accordance with requirements of the City of Houston *Fire Code* shall meet all the following requirements as set forth by below, and be acceptable to the Fire Marshal:

1. Background in the Fire Service or related Fire Safety field:
  - a. Certified Firefighter, Fire Protection Engineer, or combination thereof, for a minimum of 10 years, *or*
  - b. Fire/Life Safety Director, with a minimum of 10 years experience in high-rise occupancies, *or*
  - c. Building manager or engineer with a minimum of 15 years experience in high-rise occupancies.
2. Possess at minimum a Level I (Basic) Instructor or Teaching Certification issued by:
  - a. Accredited educational institution, *or*
  - b. Certified Fire Training Academy, *or*
  - c. Texas Instructor Certificate or equivalent credentials.
3. Demonstrate working knowledge of applicable City of Houston Codes and Ordinances.

## **SECTION 4 ---- COMPONENTS OF FIRE SAFETY PLAN APPROVAL**

### **4.1 High-rise Fire Safety Plan approvals.**

High-rise fire safety plan approval by the Fire Marshal is dependent upon successful fulfillment of all of the following three essential training elements:

1. Consultation with property management and BERP personnel,
2. Fire Warden high-rise certification class, and
3. Completion of supervised fire drill.

## **SECTION 5 --- PROPERTY MANAGEMENT CONSULTATION**

### **5.1 Consultations with Management.**

The following elements shall be covered during consultations with property management personnel:

1. Explain that all high-rise buildings within the City of Houston must have a Fire Marshal approved High-rise Fire Safety Plan.
2. Explain what is required to receive and maintain a Fire Marshal approved Fire Safety Plan.
3. Provide copies of and explain HFD Life Safety Bureau (LSB) Standard 07, "High-rise Fire Safety Plan".

4. Provide sample copy of the Houston Fire Department standard fire safety plan specific to applicable occupancy. (i.e.: High-rise Office Plan, High-rise Condominium and Apartment Plan, or High-rise Hotel Plan). Explain in detail how the plan should be completed and how to provide necessary information concerning how the building's fire and life-safety systems operate.
5. Explain that property management is responsible for disseminating appropriate information regarding the High-rise Fire Safety Plan to the people within their building.
6. Provide copy of and discuss Fire Marshal's letter, "Burning Issues."
7. Explain that certification training is required for all high-rise property management staff, employees, contract personnel and all tenant Fire Wardens.
8. Discuss the responsibilities of and train the Fire Safety Director(s) to manage and direct the execution of the approved emergency plans and procedures. Including the following:
  - (1) That the Fire Safety Director will notify the fire department and BERP of alarms and any known existing conditions without delay.
  - (2) Explain how and when to direct the activation of all applicable building fire safety equipment and systems to minimize the emergency's effect on the occupants, the building and responding fire department personnel.
  - (3) Convey to the Fire Safety Directors the administration of appropriate public address announcements.
  - (4) Ensure that the Fire Safety Director assigns someone to:
    - (a) Call the Fire Department,
    - (b) Meet the arriving fire department personnel,
    - (c) Recall the elevators,
    - (d) Monitor the fire panel for additional alarms.
9. Train the Fire Safety Director(s) and BERP in the elevator car selection process and the automatic and manual activation of the Phase-I Fire Service Elevator Recall. Train Fire Safety Director(s) and BERP on the activation and operation of Phase-II Fire Service and appropriate conditions and procedures to follow in using elevators to investigate fire alarm, in accordance with procedures found in "**Building Emergency Response Personnel – Elevators and the Use of Elevators to Investigate Fire Alarms**".
10. Discuss responsibilities of and train the BERP in proper investigation of fire alarms, methods of vertical travel, procedures for assisting in the evacuation of building occupants, and to assist the Fire Safety Director with the building fire safety systems and equipment.
11. Discuss notification of Answering Service as to the requirements for reporting of automatic fire alarms in accordance with the City of Houston Fire Code.
12. Provide sample copy of and discuss the Fire Marshal's approved fire alarm recording messages.
13. Provide sample copy of and discuss Building Information Sheet.

14. Provide copy of the Fire Marshal's letter, "Fire Alarm System Maintenance During Construction In High-rise Buildings", and discuss "false" fire alarms due to construction work being performed with in buildings.
15. Discuss the provisions City of Houston's *False Alarm Ordinance* as may apply to the particular occupancy in question.
16. Discuss fire drill procedures and the importance of tenants notifications in advance of any planned fire drill.
17. Provide sample letters for fire drill and fire warden certification participation.
18. Discuss the number of fire wardens required per code and set a date for the Fire Warden training if possible.

## **SECTION 6 --- HIGH-RISE CERTIFICATION CLASS**

### **6. 1 High-rise Certification Class.**

Attendance at a High-rise Certification Class is required for all high-rise tenant Fire Wardens and appropriate property management employees, staff and/or contract personnel.

#### **6.1.1 Elements of High-rise Fire Warden Certification training.**

High-rise Fire Warden Certification training shall include, at a minimum, the following elements:

1. All high-rise buildings within the City of Houston must have a Fire Marshal approved fire safety plan.
2. Explain that the property management is responsible for disseminating appropriate information regarding the High-rise Fire Safety Plan to the people within their building.
3. Explain the building's fire safety features; fire alarm system automatic and manual operation, audible and visual alarms, public address system operations, emergency generator and/or lighting, etc.
4. Explain Elevator functions and their dangers, shunt trips, elevator recall, "alternate floor" response, service elevators, etc.
5. Explain automatic fire sprinkler systems and their effectiveness.
6. Explain dangers of fire fighting and how it is best to close the door to confine the fire, notify everyone and "*Get Out, Never Go Back In.*" *Leave firefighting to the professionals.*
7. Discuss the uses and hazards of portable fire extinguishers and tenant fire hoses. When possible, provide demonstration and practice on the safe and effective use of portable fire extinguishers.
8. Discuss the role of the Fire Safety Director in the event of a fire or fire alarm.

9. Discuss the role of BERP team in the event of a fire or fire alarm.
10. Discuss the role of the Fire Wardens in the event of a fire or fire alarm.
11. Discuss in detail the fire plan's - "Procedures for Reporting Fires and Fire Alarms".
12. Discussion on how fires can quickly spread, the movement of smoke within buildings and the effects on the human body. Emphasize the need to get down and stay down low in a fire situation.
13. Discuss the "Delay of Alarm" and present examples in history.
14. Discuss the cause and effect of panic during fire situations.
15. Discuss smoke detector use, functions and the location of detectors in relation to early or delayed detection.
16. Discuss fire prevention, safety, and pre-fire planning on the job.
17. Discuss the planned fire drill to be conducted within the high-rise building and what it may entail.
18. Discuss fire department responses and need to notify the fire department of any changes in conditions.
19. Explain the "Three Phases of Evacuation", and the simultaneous multi-phase to determine which Phase applies to whom and when initiation of each Phase should take place. Explain:
  - (1) Phase #1 - Horizontal evacuation to the 1<sup>st</sup> Staging location on your floor adjacent to the exit stairway door ( It is generally as safe for mobility impaired occupants).
  - (2) Phase #2 – Vertical evacuation to the 3<sup>rd</sup> Staging location which is down the exit stairway to three or more floors below the lowest fire affected floor.
  - (3) Phase # 3 – Vertical evacuation is through the exit stairway, if not on the exit egress floor, to the exterior of and away from the building, to place of safe refuge.
20. Discuss "Compartmentalization" – floor and ceiling assemblies, inside doors, hallway walls and doors, stair doors, stair ratings, and stair pressurization.
21. Discuss general fire safety and pre-fire planning in the home (E.D.I.T.H. or similar fire safety programs).

## **SECTION 7 --- FIRE DRILL**

### **7.1 Fire Drill as final step in plan approval.**

The final step in the plan approval process is a supervised fire drill.

### **7.2 Prepare for and Conduct a Drill.**

It is recommended that the following steps be taken in preparation for and conducting of a fire drill.

#### **7.2.1 Pre-drill preparations.**

1. Property management should provide all of the tenants on every floor with written notification of the intent to conduct a fire drill in advance of the date chosen by management.
2. It is recommended that property management arrange for representatives from the fire alarm and elevator service companies to be present at the building at the time of the fire drill when possible.

#### **7.2.2 Day of Drill preparations.**

1. It is recommended that property management again provide means for the notification of tenants and visitors to the building as to the specific time of the planned fire drill.
2. Property management shall notify their fire alarm monitoring services (where applicable) and the fire department emergency communication center in advance, of the planned fire drill. The UL monitoring station shall be told to NOT call the fire department during time of the fire drill.

#### **7.2.3 Conducting the Drill.**

1. At the previously announced start time, the building or the selected floors within the building should be put into alarm.
2. All elevators should be placed in Fire Service Recall (Phase-I Fire Service) to recall to their designated floor(s).
3. Design the fire drill to spot check building systems operation to see if they will function properly.

#### **7.2.4 Post-drill.**

1. At the conclusion of the drill, property management shall immediately notify their fire alarm monitoring services (where applicable) and the fire department emergency communication center, that the fire drill has concluded and that the building is to be placed back on fire alarm monitoring status.
2. A post-fire drill review should be conducted to analyze the effectiveness of the fire drill and resolve any problems encountered.
3. Recommendations should be made on how additional training can improve performance.

### **SECTION 8 --- FIRE SAFETY PLAN APPROVAL**

#### **8.1 Conditions of approval.**

Approval of a fire safety plan by the Fire Marshal is contingent upon completion of the following:

1. Completion of all three phases of training and consultation.
2. Submission of a completed standard fire safety plan with adequate number of trained Fire Wardens.
3. Building management and personnel demonstrating adequate knowledge and performance of emergency procedures and basic operation of building's emergency systems.



## **SECTION 9 --- CERTIFICATES OF APPROVAL**

### **9.1 Fire Marshal Approval letters.**

Once building management has completed all of the requirements covered within this standard, letters requesting approval shall be prepared and submitted to the Fire Marshal for approval by the individual(s) approved to provide such training. Upon receipt of the request letters, and approval by the Fire Marshal, the Fire Marshal will issue a letter or certificate of approval for that building.

### **9.2 Certificates of Completion of Fire Warden training.**

A certificate of satisfactory course completion shall be issued by individuals providing Fire Marshal approved Fire Warden training. Provision and distribution of certificates are solely the responsibility of those individuals providing the class instruction. A copy of such certificate shall be submitted to the Fire Marshal for prior approval. The design of the certificate shall be sufficiently different so as not to be confused with those issued by the Houston Fire Department. Each certificate shall include the recipient's name, the instructor's name and date of the class written or printed legibly on it, and shall be considered valid for a period of 5 years from the class date.

### **9.3 Maintaining an approved fire safety plan.**

Fire Safety Plan approvals are maintained for a period of 2 years, unless any of the following conditions should occur:

1. Change of Fire Safety Director, unless site certified within less than 30 days of change, *or*
2. The minimum required number of Fire Wardens lack certification, *or*
3. Change of building's occupancy classification, *or*
4. Building employees are not properly trained or training is not maintained as required by the *Fire Code*, and this standard, *or*
5. Plan becomes outdated due to age or changes in City of Houston codes, ordinances or standards.

## REFERENCES

1. City of Houston *Fire Code*, International Fire Code, 2000 edition, as amended
2. Life Safety-Bureau (LSB) Standard 06, “Fire Depository Boxes”
3. Life Safety-Bureau (LSB) Standard 07, “High-rise Fire Safety Plans”
4. Life Safety Bureau (LSB) Standard 08, “Fire Drills”
5. Fire Marshal’s Letter, “***Burning Issues***”, E. A. (Eddie) Corral
6. Fire Marshal’s Letter, “Fire Alarm System Maintenance During Construction In High-rise Buildings”, E. A. (Eddie) Corral
7. “**B**uilding **E**mergency **R**esponse **P**ersonnel – Elevators and the Use of Elevators to Investigate Fire Alarms” Procedures, LSB Rev. Mar 2003
8. Houston Fire Department LSB, HIGH-RISE APARTMENT / CONDOMINIUM FIRE SAFETY PLAN, Rev. 3/03
9. Houston Fire Department LSB, HIGH-RISE HOTEL FIRE SAFETY PLAN, Rev. 3/03
10. Houston Fire Department LSB, HIGH-RISE OFFICE BUILDING FIRE SAFETY PLAN, Rev. 3/03



## ***BURNING ISSUES***

### **PROCEDURES FOR TRANSMITTING AUTOMATIC FIRE ALARMS**

It has come to my attention that there is some confusion as to the proper procedures for transmitting automatic fire alarms to this department. Let me clarify this procedure by referring to Chapter 4, Section 401.3 of the City of Houston Fire Code and National Fire Protection Association (NFPA) Standard 72, "National Fire Alarm Code", Section 5-2.6.1.1 which clearly states that any transmission of an alarm shall be relayed without delay.

Simply stated, the first action taken by building personnel responsible for safety evacuation, is to call 9-1-1 immediately upon receipt or knowledge of an alarm or any suspicion of fire. This shall be the first step in your evacuation plan. UL Listed central receiving stations and second-party monitoring companies shall also immediately relay any signal they receive from a subscriber building without delay to this department.

After the initial transmission of the alarm to this department, any secondary qualifying information such as a determination of a false alarm may be relayed to our emergency communication center; we will make the determination as to the proper emergency equipment response at that time.

Any occupancy or receiving station found guilty of delaying or otherwise suppressing the immediate relay of alarms or reports in their facility, will not only subject themselves to the full liability of any unnecessary damage or loss of life resulting from that delay, but will also receive a citation issued by a Fire Inspector. Fines range from \$250 to \$2000 for each violation of the aforementioned City Ordinance.

Also remember that alarm systems are required to be in proper working order at all times; repeated alarms due to malfunction or inoperative alarm systems must be corrected by responsible parties.

I know that you are as concerned as we here at the Houston Fire Department with the safety of personnel and guests at your facility. Working together, we can make a difference through quicker response, which is imperative in any emergency where human life and property are at risk.

E. A. (Eddie) Corral  
Fire Marshal



## Fire Alarm System Maintenance During Construction in Buildings

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***“The fire and life-safety systems required by City of Houston Codes are maintained in an operative condition at all times.” Houston Fire Code Section 901.6***

If the nature of construction warrants, the following options are approved by the Houston Fire Department, in accordance with Chapter 9, Section 901 of the City of Houston *Fire Code*, during the full or partial construction of floor(s) within a building:

1. Installation of molded plastic cups over smoke detectors.
2. Installation of bags over smoke detectors.
3. Replacement of smoke detectors with rate-of-rise heat detectors.

If cups or bags are installed, a written process shall be established by the Building Management and included into all Building's Construction Rules and Regulations to ensure:

- a. Proper installation of cups/bags.
- b. Proper removal of cups/bags whenever area is unoccupied and following up to verify removal.
- c. Maintenance of daily documentation of involved locations, including contact names.
- d. Designation of appropriate person(s) in construction area to activate the fire alarm, call the Houston Fire Department and building management in the event of an actual smoke / fire situation.

Heat detectors are not acceptable in elevator lobbies. Lobbies must have cups/bags installed on smoke detectors.

The Houston Fire Department does not allow the disabling of an alarm system by device, zone or floor, nor the complete deactivation of the fire alarm system.

In the event of demolition of a floor(s) including the removal of the fire alarm system, building management shall:

1. Notify the Houston Fire Department Office of Emergency Communications by telephone at: (713) 222-7643/44.
2. Check with an alarm company for temporary alternatives.
3. Minimum requirements are a temporary standpipe and two exits from the building.

Violation of the above requirements may subject the building management to Fire Code citations, (fines \$250 - \$2000) for each violation, and /or fines for violation of False Fire Alarm Ordinance.

E. A. (Eddie) Corral,  
Fire Marshal